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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,481	09/27/2001	Kwang-Ho Cha	SEC.838	8862

7590 06/11/2003  
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EXAMINER

LUU, THANH X

ART UNIT PAPER NUMBER

2878

DATE MAILED: 06/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/963,481

Applicant(s)

CHA, KWANG-HO

Examiner

Thanh X Luu

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-10 is/are rejected.
- 7) ☒ Claim(s) 5 and 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the current detecting part and the electro-optical converter assembled on a board and disposed in a stripper of claim 5 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Specification*

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

3. The disclosure is objected to because of the following informalities:

Examiner believes that every instance of "tendetron" should be changed -- tandetron--; otherwise, it is unclear what "tendetron" means and refers to.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the publication of Choi et al. (KR 98-077081, published November 1998) in view of Kordts et al. (U.S. Patent 4,866,436).

Regarding claims 1 and 7-9, Choi et al. disclose (see translated abstract) a device and method for detecting a turbo pump drive state, comprising: a turbo pump formed inside an accelerator; a current detecting part for detecting a turbo pump driving current applied to the turbo pump, and providing a first electrical signal indicative of the detected turbo pump driving current; a displaying part formed outside of the accelerator for receiving and displaying the turbo pump driving current. Choi et al. also disclose (see translated abstract) comparing the current value of the external electrical signal with a set current value range; and cutting off power supply of the accelerator when the electrical signal is out of the set current value range. Choi et al. do not specifically disclose an electro-optical converter for converting the first signal into an optical signal, a photoelectric converter for converting the optical signal into a second electrical signal or an optical cable as claimed. Kordts et al. teach (see Figure 1) a device for detecting having an electro-optical converter (6, 11, 12) for converting an electrical signal to an optical signal; a photoelectric converter (13) for converting the optical signal to an optical signal; and an optical cable (2) formed between the electro-optical converter and the photoelectric converter for carrying the optical signal. Kordts et al. further recognize (see column 1, lines 20-23) that such conversions reduce electromagnetic interference of the detected signal. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an electro-optical converter inside the

accelerator, a photoelectric converter outside and an optical cable as claimed in the device of Choi et al. in view of Kordts et al. to provide a more compact turbo pump current detector that is more resilient to electromagnetic interference.

Regarding claim 4, Choi et al. in view of Kordts et al. disclose the claimed invention as set forth above. Further, an electrical cable for supplying drive power to the turbo pump is inherently coupled from a generator. Choi et al. and Kordts et al. do not specifically disclose the generator inside the accelerator. However, it has been held that making a device integral requires only routine skill in the art. *In re Larson*, 144 USPQ 347. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the generator inside the accelerator in the apparatus of Choi et al. in view of Kordts et al. to provide a more compact device.

6. Claims 2, 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the publication of Choi et al. in view of Kordts et al., and further in view of Fu-Kang (U.S. Patent 6,169,015).

Regarding claims 2 and 10, Choi et al. in view of Kordts et al. disclose the claimed invention as set forth above. Choi et al. and Kordts et al. do not specifically disclose an interlocking signal or an interlock generator for comparing. Fu-Kang teaches (see Figure 1) an interlock generator (10) for generating an interlocking signal when fluctuations in the operation of an ion implantation device occur. Thus, Fu-Kang recognizes that an interlocking signal and an interlocking generator is preferred in order to prevent further errors in ion implantation. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an interlock

generator or an interlocking signal in the apparatus of Choi et al. in view of Kordts et al. and Fu-Kang to immediately stop implantation and reduce errors in ion implantation.

Regarding claim 3, Choi et al. in view of Kordts et al. disclose the claimed invention as set forth above. The accelerator inherently has a power supply. Choi et al. and Kordts et al. do not specifically disclose interrupting power to the accelerator. Fu-Kang teaches (see Figure 1) interrupting power to the ion implantation device with an interlocking signal. Thus, Fu-Kang recognizes that immediate halt to the operation of the device can be achieved by interrupting the power supply to the device. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide stop providing power to the accelerator by interrupting the power supply in the device Choi et al. in view of Kordts et al. and Fu-Kang to immediately stop implantation and reduce errors in ion implantation.

***Allowable Subject Matter***

7. Claims 5 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: a device for detecting a turbo pump drive state as claimed, more specifically in combination with: disposing the current detecting part and the electro-optical converter on a board in a stripper to prevent dielectric breakdown is not disclosed or made obvious by the prior art of record.


**Conclusion**

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is (703) 305-0539. The examiner can normally be reached on Monday-Friday from 6:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta, can be reached on (703) 308-4852. The fax phone number for the organization where the application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

txl  
June 3, 2003



Thanh X. Luu  
Patent Examiner